One Decision But Many Practices: a Practice-Based Approach to Price Decision-Making

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Abstract

Pricing greatly impacts the profitability of firms and is considered a strategically and operationally important process. Though, price decision-making is very complex and thus, also challenging. This is due to the fact that firms often experience high customer pressure to lower prices, pricing information asymmetry across the organization and coordination issues. Research has only to a limited extent dealt with this complexity. To shed further light on this, this paper employs a practice approach to pricing decision-making by studying two case companies. We suggest that the price decision-making process consists of a set of four practices, namely information-processing, communicating, interacting with pricing system and delegating pricing authority. The practices, and its inherent activities, are interrelated and carried out by various actors in the process in order to deal with the complexity of pricing, eventually leading them to pricing decisions. This practice-based study thereby contributes to the literature on pricing practices, behavioral pricing, delegation of pricing authority and sales-as-practice research.

Keywords: pricing, pricing practices, behavioral pricing, price decision-making, information.

Introduction

Setting the right price has a huge and direct impact on profitability (Liozu, 2015; Marn, Roegner & Zawada, 2003) and is considered a firm's "strategic weapon" (Dutta, Bergen, Levy, Ritson & Zbaracki, 2002, p. 61). The price decision-making process, however, is complex and problematic for firms.

It is difficult to coordinate and take all relevant pricing information into consideration as it is available in various locations across the organization. Dutta, Zbaracki and Bergen (2003) thus argue that the "pricing process involves personnel from different parts of the firm, who have different sets of information and assumptions about the customer" (p. 628). Information about capacity may not be freely available in ERP systems across firms' organizational units, likewise demand information may be scattered around the organization and cost information may not be shared. In principle, ERP and pricing systems could handle these problems, but a fully automated pricing procedure may generate further issues, especially due to the ambiguity of pricing information.

Pricing information is often difficult to evaluate. Customer value information is incomplete and uncertain (Anderson, Kumar, & Narus, 2007; Spender, 1989). It is difficult to gauge customers' value perceptions because customers are seldomly willing to directly disclose their willingness to pay. Dutta et. al. (2003) therefore argue that it is challenging to estimate price elasticity, particularly for firms that serve different customer segments that "face considerable uncertainty about the price elasticity and the relative profitability of these different groups of customers" (p. 628). Competitor information is often inaccurate as discounts given off the known list prices may vary greatly. Also buyers often falsely claim to be getting lower price offers at the competition, which results in sales people having a biased perspective on competitor prices (Nagle, Holden & Zale, 2010). Even internal cost information may be imprecise. The exact nature of the costs used for evaluating the pricing decision potentially is also subject to error and uncertainty as allocation of indirect cost pools may be arbitrary or imperfect (Datar & Gupta, 1994; Kaplan & Atkinson, 1998).

The pricing process is also made complex by the fact that incentives and interests are not necessarily aligned across the organization (Homburg, Jensen & Hahn, 2012; Liozu, 2015; Weinberg, 1975). If interests were aligned a purely centralized or decentralized pricing decision could be made through transferring information to the central or local decision-maker. However, due to the uncertainties involved gauging customer value, cost and competitor information, a simple central and local solution may not be optimal. For these reasons pricing is a complex process with multiple actors and where there is considerable uncertainty about the validity of pricing (Dutta et. al., 2003; Capon & Hulbert, 1975).

In general, pricing research has only to a limited extent investigated this complexity in empirical studies. The majority of pricing research – including normative and experimental literature – conceptualize the pricing decision as a decision taken by one individual or an organizational entity (Drake & Haka, 2008; Hinterhuber, 2004; Hirschey & Bentzen, 2014; Ingenbleek, DeBruyne, Frambach & Verhallen, 2003; Ingenbleek & van der Lans, 2013; Plinke, 1985; Tellis, 1986; Wilken, Cornelißen, Backhaus & Schmitz, 2010).

Three streams of literature are particularly helpful in increasing our understanding of how firms handle complexity in the pricing process. The first stream of research focuses on behavioral issues in pricing. A key focus is on the use of intuition in the decision-making process, which may lead to superior decision-making through taking tacit clues into consideration, reducing complexity and enabling fast decision making, but it may also be biased (Hinterhuber, 2015; Iyer, Xiao, Sharma & Nicholson, 2015; Kahneman & Klein, 2009; Kahneman, Knetsch & Thaler, 1986; Kahneman & Tversky, 1982). While this literature generates insight into how decisions may be made in situations of incomplete knowledge, it ignores the organizational processes where information is coordinated between multiple actors in the organization. So while the behavioral approach constitutes an interesting and important approach to pricing, it may be extended through an explicit focus on the organizational practices involved in making coordinated pricing decisions.

The sparse literature on delegation of pricing authority understands the pricing process as a problem of finding the right decision-maker and choosing an optimal level of pricing delegation. Research here indicates that the relationship between delegation and centralization is complex. Homburg, Jensen and Hahn (2012) argue that the relationship between vertical delegation and performance is U-shaped. The delegation of decision rights to sales entails a tradeoff between delegating decision rights to sales that have knowledge and understanding about customer preferences and making centralized decisions in order to coordinate decisions and diminish the extent to which “unnecessary rebates” are given (Homburg et. al., 2012, p. 55). The literature, however, is not clear on how delegation of pricing authority actually takes place in practice.

In order to add to these two streams of pricing research we suggest that the emerging stream of research on pricing practices may add further insights into how firms deal with the complex nature of pricing. A practice-based approach to pricing focuses on the informal routinized patterns of interaction and behavior that make up pricing processes. In this approach the individual is part of a “socio-economic and social technical order” (La Rocca et. al., 2016, p. 4) and decision-making is a social rather than individual phenomenon. We therefore study how organizational actors use pricing information (Forman & Hunt, 2005; Ingenbleek et. al., 2003; Ingenbleek & van der Lans, 2013) and focus on the practices that lead to a price decision (La Rocca, Hoholm and Mørk, 2016). In doing so the paper responds to calls for more studies on the micro-foundations of pricing (Liozu & Hinterhuber, 2014) and arguments that extant literature does not provide“sufficient detail to understand how companies organize for pricing” (Carricano, Trinqueste & Mondejar, 2010, p. 468). Specifically, we want to analyze the following research question: “How do pricing practices shape pricing decisions?”

The research question is investigated through the analysis of two case studies of the B2B pricing process. The analysis finds that four practices are used in the price decision, namely information-processing, communicating, interacting with pricing system and delegating pricing authority. In the

pricing decision-making process actors employ these various practices to make the process flow; actors use intuition to process information, they overrule pricing system output and develop algorithms, they share responsibilities and communicate in order to make use of different information to effectuate coordination. The pricing decision is thus a number of interlinked practices that enable organizational actors to make informed and coordinated pricing decisions.

With the development of a practice-based approach to pricing, this paper contributes to existing pricing research in three ways. First, by generating a detailed overview of the more micro-level practices, we add to and extend the more general literature arguing that price-setting practices are based on cost, competitor or value information (Ingenbleek & van der Lans, 2013). This study details the specific practices and activities that help firms to deal with the complexity of using competitor, customer and cost information for making price decisions.

Second, we contribute to behavioral research on pricing. This study documents that intuitive and rational processing of information by an actor is dependent on and interlinked with other activities and practices. Thus, an individual's information-processing may not only be analyzed by applying a cognitive perspective, but it must also be considered in its social context.

Third, we extend research on price delegation by detailing how the pricing practices analyzed in this paper are used to make given level of centralization and organizational design work as intended. We thereby also agree with Homburg et. al. (2012) that intermediate levels of price delegation are probably being optimal for price decision-making.

The paper is structured as follows. First, we review the literature on the practice approach and pricing practices, eventually developing four pricing practices. Second, we present methods. Third, we analyze pricing practices by studying two case companies. Finally, we discuss the findings and conclude the paper.

A practice-based approach to pricing

Already a few decades ago Oxenfeldt (1973) spoke about a "gap between pricing theory and application" (p. 48). This gap still exists as only a few studies have dealt with actual pricing practices of firms (Cressman, 1999; Forman & Hunt, 2005; Ingenbleek et. al., 2003; Ingenbleek & van der Lans, 2013). Ingenbleek and van der Lans (2013) thus argue that there is a discrepancy between 'actual' pricing practices of organizations and the normative pricing strategy literature. Recently, practice theory has received increased attention and 'the turn to practice' has been effected in various field, e.g. accounting, strategy, marketing and sales (Nicolini, 2012; Whittington, 2011).

The practice-based approach supplies pertinent theoretical resources for shedding light on pricing practices. When using a practice lens to study phenomena, "one sees the fine details of how people use the resources available to them to accomplish intelligent actions, and how they give those actions sense and meaning" (Gherardi, 2012, p. 2). The practice approach considers practices as the unit of analysis (Korica, Nicolini, & Johnson, 2015). Practice-based studies "do not investigate practices as abstract entities but rather they praxeologize phenomena, turning the study of decision-making into the study of decision-making practices" (Nicolini & Monteiro, 2016, p. 18). In line with this, this paper is a study of the practices of making sales price decisions.

There are various definitions of practices based on the different traditions (Nicolini & Monteiro, 2016). We will focus on the commonalities identified by Nicolini and Monteiro (2016) and argue that our practical approach is to take "orderly materially mediated doings and sayings ('practices') and their aggregations as central for the understanding of organizational and social phenomena" (p. 2). It focuses on the social character of processes and the routinized enactment of practices to solve problems. Practices in this view are "not personal qualities", but are shared among organizational participants (La Rocca et. al., 2016 p. 4).

It is the aim of this study to join the 'strong program' of practice-based research (Nicolini, 2012). Such studies "explain what goes on in practices", going beyond descriptions (La Rocca et. al., 2016, p. 5). Jarzabkowski, Kaplan, Seidl and Whittington (2016a) argue that the three elements of a practice, i.e. what, who and how of a practice, and their interaction need to be considered. The authors further explain that practitioners are the carriers of the practices, and that such practices only exist virtually outside of praxis. In other words, the focus points for empirical research on practice are practices, practitioners, and praxis (Reckwitz, 2002; Whittington, 2006, 2011).

In the following we suggest that four practices are particularly important in the pricing process, and which will form the main units of analysis in this study. A key element of the pricing decision making process is information-processing (Ingenbleek & van der Lans, 2013). This practice is vital as firms need to develop and evaluate information in order to set the right price. The abundance of information and difficulty in generating information, e.g. about customer preferences, however, make the pricing decision very complex. This may lead to a cognitive overload (Ingenbleek & van der Lans, 2013) and uncertainty about which information to use in the decision process. Pricing managers can choose to approach this complexity through increased data collection and analysis. The need for making fast decisions, though, makes it problematic for price decision-makers to solely rely on thorough, rational processing of information because of the increased time used on data collection and analysis (Dane & Pratt, 2007). There is therefore a growing recognition that intuitions, which are "affectively charged judgments that arise through rapid, nonconscious, and holistic associations" (Dane & Pratt, 2007, p. 40), may facilitate decision-making. This is due to the speed and ability to make sense of multiple contradictory clues and extrapolation of experience for new decision making situations (Dane & Pratt, 2007; Dane, Rockmann & Pratt, 2012; Dörfler & Ackermann, 2012). Pricing decisions are therefore like to rely on both intuitive and rational processing of information in order to make elaborated and timely decisions and to adjust for potential errors coming with the two approaches.

The information needs to be shared in order to ensure that the right information is available to the parties involved in the pricing decision. The practice of communicating is therefore an important element for firms' pricing decisions (Mason & Leek, 2012). The practice of communicating is used to enable action in other parts of the organization. It may be part of both formal structures of the organization and also the informal channels through which actors share information and affect each other. The information communicated may not be accurate as "salespeople can only report what they perceive and salespeople's perceptions are not always accurate" (Liu & Comer, 2007, p. 571). The information communicated therefore needs to be processed before it is used for making pricing decisions or stored in information systems.

Pricing decisions are facilitated and shaped by information systems that store and analyze pricing information. Such systems are usually dependent on the gathering of information by sales people in order to get access to relevant information (Pass, Evans & Schlacter, 2004). The system may not take all important factors into consideration. First, the historical data stored in the system may be based on abnormal variances, which shape subsequent output of the system. Second, often not all relevant pricing information can be stored in the system because it contains tacit elements (Polanyi, 1966). Systems therefore do not just process information independent from human actors, but are dependent on the active use of pricing systems. Dutta et. al. (2002) argue that the interrelationships between "superior systems and better-trained people can form a virtuous cycle in which technology and human capital reinforce each other to become optimally effective" (p. 64). The pricing process is shaped by socio-technical systems (La Rocca et. al., 2016) and pricing systems therefore cannot be left alone to make pricing decisions. Actors use the practice of interacting with the system in order to make the process flow.

The delegation of pricing authority is another key element determining how practitioners make sales price decisions. It relates to the authority given to the local sales force, allowing them independently to deviate from the list price, e.g. by giving discounts, in order to negotiate and complete a transaction with a customer (Homburg et. al., 2012; Pollono, 2016). Delegation of pricing authority is potentially problematic due to information asymmetry (Balan, 2016). Sales managers might have superior

internal information, e.g. strategic and cost information, whereas the sales force typically has superior knowledge of customers, their willingness-to-pay and the competition (Frenzen, Hansen, Krafft, Mantrala & Schmidt, 2010). To this date, most studies have employed agency theory to study this problem (Yuksel & Sutton-Brady, 2006), focusing on opportunistic behavior from sales people[1]. The literature furthermore treats price delegation as a singular and discrete structural choice for allocating decision rights between central management and local sales (i.e. no/low, medium or high pricing authority to the sales force), but there is a lack of empirical evidence on how companies deal with price delegation in practice and how informal practices shape information asymmetry. As a result, the practice of delegating pricing authority is a fourth practice for understanding how firms arrive at its price decisions.

In sum, we suggest that the four practices (information-processing, communicating, interacting with system and delegating pricing authority) are of importance when seeking to understand how firms decide on a particular price. In the following, we elaborate on the methods used for investigating the practices of price decision-making.

Method

We chose to study two cases in order to be able to analyze and compare pricing practices in depth. Had we chosen more cases it would have been impossible to achieve the level of depth required for understanding the complexity of pricing practices. The selected numbers of cased allowed us to zoom in and out on the practices studied (Gherardi, 2012; Nicolini, 2009, 2012). Zooming in here means looking at the details of a practice in its specific local situation whereas zooming out refers to taking a broader perspective on the practice, e.g. in its wider organizational or processual context. Switching between the two lenses helps to discover new aspects of the phenomenon under investigation (Nicolini, 2009). Saying it differently, through "magnifying or blowing up the details of practice […] certain aspects are fore-grounded and others are temporarily sent to the background (Nicolini, 2009, p. 1412).

The two cases were selected based on the following criteria. We wanted some variation, but also some commonalities in the types of cases in order to compare their pricing practices. It was important that both case companies had competence in pricing, and prioritized pricing activities in the business. Furthermore, we were looking for firms where the sales force did not have full pricing authority. Only 11% of the companies examined by Hansen, Joseph and Krafft (2008) gave full pricing authority to their sales force, i.e. freedom to set any price above marginal cost. Therefore, we were mainly interested in cases with no or limited pricing authority, i.e. 28% and 61% respectively of the companies (Hansen et. al., 2008). With regards to the differences, we were looking for a service and a manufacturing company, operating in diverse industries. We decided on purpose for one company with an advanced revenue management system, and one with a self-built MS Excel tool, as often used in practice. Additionally, convenience was a criterion. Getting access to firms' pricing processes is usually rather problematic, but it is vital for the research approach of this study. Stakeholders of the two case companies knew the authors from conferences and previous projects. The existing

[1] Most studies available in the price delegation literature dealing with information asymmetry had this approach (e.g. Frenzen et. al., 2010; Homburg et. al., 2012; Lal, 1986; Mishra & Prasad, 2004, 2005). The general argument is here that the person having superior knowledge should have the authority to set the price. Other topics discussed in that regards are agency cost (Hansen et. al., 2008; Joseph, 2001), control system (Hansen et. al., 2008), competition (Bhardwaj, 2001), market knowledge and effort-price trade off (Joseph, 2001) and compensation (Frenzen et. al., 2010; Hansen et. al., 2008; Homburg et. al., 2012; Joseph, 2001; Weinberg, 1975).

relationships and the top management commitment allowed for better access. Three potential cases were deselected due to difficulties in getting full access and immaturity of pricing.

The first case company is DAN Cargo is a freight forwarder connected to a large airline carrier. The firm is responsible for utilizing the freight capacity of the carrier, but it is managed independently. Price-setting is performed on a daily basis, which is in line with the practice approach. The complexity of setting prices in terms of demand information (high volatility) and capacity planning is high.

The second case company is DAN Communication is a manufacturer of communication devices, which are sold in B2B and B2C markets. The analysis will focus on the practices for sales transactions, i.e. sales prices, and not list prices. We choose to focus on transactions because of the everyday character of the pricing decision and because it is more akin to the pricing decision made in DAN Cargo.

The paper has employed multiple methods in the data collection: 18 transcribed interviews, 4 observations (3 pricing meetings and 1 shadowing of a pricing system user) and access to 22 pricing documents. Additional subject-related interviews (not transcribed) on pricing have been conducted at the case companies. In many of the 18 interviews, the interviewees illustrated how they are using specific tools on their computer, showing recent examples of price decision-making, and running us through e-mail conversations with customers and colleagues involved in the process. Furthermore, at DAN communication we had access to all sales data as one of the authors is employed by the case company. Thus, we had the possibility to check the actual performance numbers of the sales people interviewed to verify and better understand the information provided, e.g. discounting behavior.

The data collection and analysis was iterative with substantial overlap. In accordance with Dutta et. al. (2003) we treat pricing as a process. Therefore, we started out in both cases with getting an understanding of the overall price decision-making process by conducting explorative interviews. From the beginning, we put high emphasis on praxeologizing our questions (Korica et. al., 2015). Initial interviews were read, discussed and analyzed by the co-authors in various sessions. Themes and gaps in the data were identified. The guide for the semi-structured interviews was continuously revised and further developed. As an example, it soon became apparent that the processing of pricing information was paramount and consequently, we reviewed the literature on intuition. The revisions of the guide were thus primarily based on the previous interviews and the literature we consulted throughout the research process. The data analysis then proceeded into a more systematic, but still iterative mode (Miles & Huberman, 1984). In order to structure the data and to grasp the specific and broader context, we started out by coding for the process steps, which we perceived as useful for zooming in and out on practices (praxis). Once the process was mapped, we went on to identify the practices existing in the data, which was the main purpose for coding the data (practices). As a third step, we coded for the actors involved (practitioners & materials in the form of the pricing systems). To gain further insights into the context and complexity (praxis), we additionally coded for issues and challenges. Following the above, further data was collected to fill out weak parts of the empirical material.

Coding was performed in NVivo, resulting in a practice coding scheme. Earlier versions of the scheme were tested, challenged and revised. This process reran numerous times until the coding scheme was sufficiently encompassing and relevant in relation to the subject. After having finalized the coding scheme, the interviews were once again coded twofold in NVivo, meaning by two researchers independently. The results were compared and each coded line of all transcripts was

reviewed. For all interviews, the intercoder reliability measure[2] was 87% (DAN Communication) and 80% (DAN Cargo), respectively.

Coding scheme – practices

Based on the previously described methodological process, the practices were identified and validated. A practice scheme (Ttable 1) emerged consisting of four practices: information-processing, interacting with system, communicating, and delegating pricing authority. A practice is defined as a "'bundle' of activities" (Schatzki, 2002, p. 71), meaning that it consists of various activities. The practices, and their respective activities, are used in the sales price decision-making processes at the two case companies.

As argued earlier, the practice approach implies that the practices are the unit of analysis, moving the empirical research away from the individual, e.g. sales people, as the primary focus point (Geiger & Kelly, 2014). With regards to the three elements of practices, the below scheme answers therefore the 'what', and only to a limited extent the 'who' and 'how'. The scheme serves as a basis for further analyzing the 'who' and 'how', i.e. the practitioners enacting the practices in praxis (Jarzabkowski et. al., 2016a).

Table 1: Coding scheme - practices

Practice	Activity	Description
Information-processing practice	Verifying pricing information	Verification of received pricing information.
	Adjusting pricing information	Adjustment of pricing information before it is further communicated or used, e.g. added to a pricing system.
	Rational processing of pricing information	Conscious analysis of pricing information.
	Intuitive processing of pricing information	Rapid, non-conscious judgements about pricing information.
Interacting with system practice	Using the pricing system	Usage of the pricing system, e.g. filling in the blanks with data to receive an output from the system.
	Tuning the pricing system	Changing the pricing system, e.g. modifying or correcting formulas or parameters manually.
	Overruling the pricing system	Human decision to overrule the pricing system's suggestion (output), e.g. due to consideration of other factors disregarded by the system.

[2] The intercoder reliability test is used to measure the level of agreement between the two coders. It is calculated by the number of agreements divided by the number of agreements and disagreements. It adds objectivity and reduces errors (Miles & Huberman, 1984). Miles and Huberman (1984) argue that the intercoder reliability should be at least 70%.

Communicating practice	Discussing the price or pricing information	Two human actors inside the selling firm discuss a pricing case for a sales transaction.
	Forwarding pricing information	Forwarding pricing information to another actor.
	Challenging an actor	An actor challenges another actor in the pricing process.
	Guiding an actor	An actor provides pricing information that guides the receiver of this information.
Delegating pricing authority practice	Passing on pricing responsibility	Passing pricing responsibility on to another actor.
	Sharing pricing responsibility	Sharing the pricing responsibility with another actor.
	(Dis-) approving the price	An actor of the selling firm approves or disapproves the price for a sales transaction.

DAN cargo analysis

DAN Cargo is a leading air cargo carrier in Scandinavia. Recently, they have changed its pricing operations and established a more centralized and IT-based approach. The market of airfreight is influenced by different seasonal and geographic trends, but also many irregular conditions and high volatility. This fast-paced environment and the resulting variation in demand and capacity creates high complexity for the case company. It will be displayed in this section that the pricing process is centered around the revenue management system (abbreviated as RMS). The system users are crucial in this process as they evaluate the input and also output of the system, and therefore determine the pricing decision.

The RMS produces a minimum price which is then supplied to the sales force that negotiate with customers. In this process clients pressure and challenge the sales force, which further complicates price setting. A route analyst explains:

(Route Analyst) One can say that today there's a danger that you might put a price too low because you are good friends with the customer. There is also the advantage that you might say: "now I reduce prices" - but maybe put a wrong price because you know the customer or because you do not know the customer. The system helps you with this - it may, though, never take over 100% - but at least it can help and guide you. You get a more helicopter view on the pricing because then it's not just emotions, but it is also facts that go into the price calculation.

To reduce the negative effects of relational pressure and emotional, non-analytical decision making, the company implemented a new RMS and centralized pricing decision making authority. The system is built up on algorithms, enabling fast rational processing of market information with the purpose of guiding the system users. The system, however, is dependent on other practices enacted by humans in order make the pricing decision as will become evident throughout the next sections.

The price-setting at DAN Cargo depends on the hurdle-rate, which can be considered as a price floor and price anchor. The hurdle rate helps in informing which capacity should be sold to whom, and

when and at what price to achieve maximum profitability and revenue for a flight. If demand is high, prices will increase and if demand is low, prices decrease because the capacity for airfreight is fixed and relatively independent of demand.

Based on the empirics a process flow chart was designed to illustrate the pricing process for a specific sales transaction. The structure is based on the interaction of the various actors (human & system) in the pricing process in order to analyze the practices.

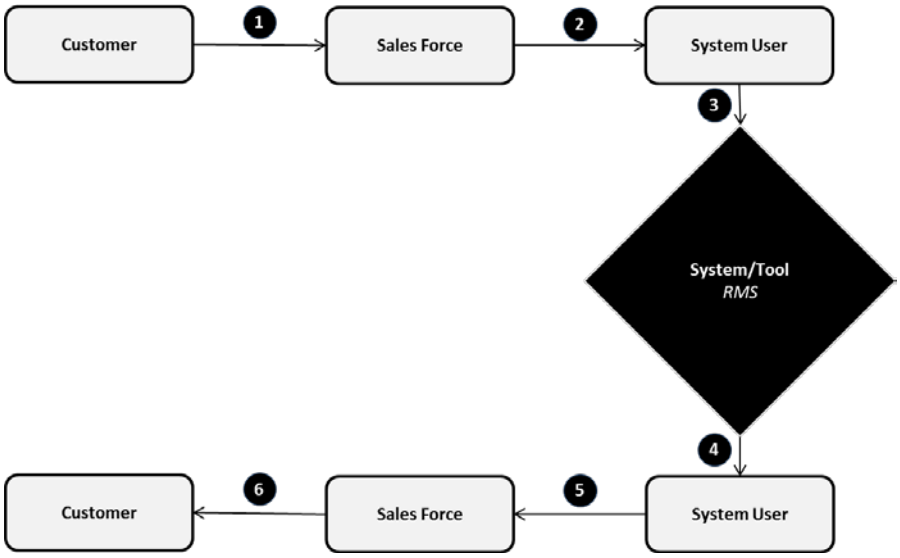

Figure 1: DAN Cargo pricing process for sales transactions

Customer – sales representative (Step 1)

The shift to a more centralized decision-making paradigm, led to new and different roles for the sales force. Direct negotiation is minimized and the sales person is now more of a caretaker than a price setter. The new roles require customer meetings and the gathering of customer information for two purposes: First, the negative effects on sales due to the lack of negotiation opportunities should be mitigated by service, and second, gathering of market and customer information that serve as input for the RMS:

(Regional Sales Manager) For example, Copenhagen Fur auctions have sold a lot of fur. Then we hear, the auction went well, so there will probably be much fur cargo 14 days from now. It is those feelings you get, when you are out and talk to the customer….

The quote illustrates that the company creates an understanding of what is going on in the market through the collection of relevant information. Among other sources, the customers forward information in conversations with the sales force to DAN Cargo. The regional sales manager exemplifies input as being specific occurrences in the market, which potentially increase or decrease market demand for airfreight. The data gathered by the sales force is mostly of qualitative nature and therefore a non-quantified anticipation of the future.

Sales representative – system user (Step 2)

In the first process step it has been outlined that the information provided by the customers and observations made in the market, serve as the starting point for the pricing decision. The information is now forwarded to the system users at the central headquarter, which are the route controllers and route analysts located that work mainly with the RMS. For analytical purposes, these functions are

combined under the position of system users. The system users are central in the communication because of their strategic placement between the sales force and the system.

The information from the sales force is forwarded and discussed in weekly meetings, dialogues and discussions:

(Strategic Pricing Manager) It is typically our sales people that have the finger on the pulse. And in addition, we have organized meetings, so we have weekly sales meetings with all our regions.... we have lost this one customer, or we have found a potential new customer that increase demand, or now we believe that Lufthansa cancels three days next week, so that means something extra demand, or now Norwegian comes in and starts flying somewhere in the United States ….what should we do about it? Should we increase or decrease our demand in relation to that? Well, there are many different types of information.

The planning and forecasting in the company is heavily dependent on receiving input from the sales force as they have a major role in forwarding information and guiding the system users. The system users rather informally discuss pricing information with the sales force every day in order to make sure that they are up-to-date.

Sales people, however, tend to exaggerate demand, which has to be taken into account. The system users' awareness of conflicting interests calls for an adjustment of the information:

(Route Analyst) The customer will buy larger quantities, and they will pay a very good price, and it can be set up without any cost. Once the deal is made and the whole thing set up then you can at least deduct 50%. So if they say to me, I have to rely on something down from Germany, and it is average pallets with two tons, then "no" my gut tells me - and now I have been sitting on this for many years - that it's not two tons, this is only volume goods on to 1650 kilos. So I assume only that it's 1650 kg.

The system users have to be cautious about demand input because sales people compete for capacity on flights. This explains why exaggerations from the sales force seem common. Sales people tend to overstate, which means they adjust pricing information, e.g. claiming higher capacity for their customer. Although the SRs are the main provider of information for the RMS, their input cannot be directly used and the system users therefore often adjust information in order to remove potential biases.

The system users employ two approaches to process the information given by the sales force. One way is to verify the received information whereas the other one is to use intuition to make an adjustment of the information. Often it is a combination of the two, which means that both rational and intuitive processing of information takes place.

The practice of verifying information helps to reduce the uncertainty the system users are facing:
(Route Analyst) I think we are listening to them [sales force]. And I also think that cooperation has become much better. But if I hear the same thing from the vendors over in Sweden, and I am in a meeting in Europe somewhere, and they are saying the same thing to me too… "

System users use various sources of information and when sources with different interests say similar things, the information is verified and information becomes more believable. The confirmation from other people in the organization further fosters the perceived need of the system users to take action.
A second approach to processing information is through using experience-based intuition:

(Route Analyst) "…when there are at least two or three that begin to mention the same thing to me, that's when my stomach starts to say: "then we have to do something*….. now there is a lot or now there is a little", right? Then I can tune it that way ...But I can only rely on what the sellers say, what my gut feeling is...*

The qualitative data needs to be converted into a quantity to be entered into the system. Today, there is no algorithm or similar available. Rather the system users have to rely on the information received, and in addition listen to gut-feelings to understand what the effect will be ("a lot" or "a little"), and then act accordingly (step 3). Therefore, the system users' intuition is used for handling the input from sales in order to turn it into a quantifiable value in one of the algorithm's parameters of the RMS.

In summary, this section outlines that the practices of information-processing and communicating are key in this process step. The information forwarded by the sales force is being carefully considered by the system users because of the potential for biased information. Therefore, the practice of information-processing is characterized by the activities of verifying and adjusting information. In this vein, the system users rationally and intuitively process the received inputs before it is entered in to the system. The practice of communicating is highlighted by the importance of forwarding and discussing pricing information in order to guide the system users.

System user – system (Step 3)

The RMS determines the available capacity on each flight, identifies the amount of each type of product that requires space on each flight and allocates capacities to the appropriate products. It forecasts and deploys available capacity, which is subsequently matched with the anticipated demand in the system's optimization algorithm. The different inputs are combined to determine the hurdle rate, eventually suggesting a price to the system users. Thus, the system needs to be used in order to set a price.

The automated forecast needs manual changes in case the system's demand forecast is in contradiction with the expectations of the organization as discussed above. The automation of the pricing decision through the RMS made the verification of pricing information even more important:

(Route Analyst) Because it can calculate a lot and can anticipate a lot based on some statistics and things like that. But the manual input may become even more important in the future, the more you leave the system to calculate.

The system is able to calculate the hurdle rate in a very sophisticated and mathematical way, but it is a prerequisite that the human actor tunes it manually.

(Route Analyst) So you can tune .. If you know demand goes up .. let's say there is a factory, they need something to a factory in the United States, then you can go to our RMS and tune on demand on the OD, origin destination, where it flies off and on. … and that is helping to tune up the price because we expect here to be more.
In many instances, it is not sufficient to simply use the system, but the system users actively need to tune parameters of the RMS, e.g. turning up the demand. The system's algorithm is reconstructed to produce supply and demand optimized hurdle rates.

The system also has problems with non-recurrent incidents, which are not automatically removed. This results in a bias, which has to be taken care of through tuning the system:

(Route Analyst Manager) Historical data need help and sometimes a market may change which makes history obsolete and then you have to adjust for that and then you can tell the system what it is you think is happening . We cannot forecast the 'ash cloud' [which grounded airplanes for six days in 2010], but the system has historical data and we need to remove that.

The system does not always produce valid forecasts, which affect its suggested prices due to its automatic rational processing. The system will not automatically reject the historical information of irregular variances like the 'ash cloud'. Actors therefore tune parameters when interacting with the system.

In sum, after processing the information (Step 2), the system users start the practice of interacting with the RMS. Here, the system is often tuned when it is being used by the system users, e.g. correcting the algorithms for producing forecasts, when history is an invalid basis for predicting the future.

System – system user (Step 4)

The produced system output is evaluated and sometimes corrected. The system is dependent on being operated by the system users in order to make adequate decisions:

(Route Analyst) But you must know how your system works and you should know what it is your system can not do for you. Where are the weaknesses in the system? And this is what I should know to be better able to help. If you do not understand how the system works, then it becomes too hard because then you do not trust the system. The system must be the work of average things running through, and then there are all the exceptions.

The quote shows that the system guides the system users, but it also highlights that the system is reliant both on the manual input, but also the evaluation of the output. For some processes the system produces accurate forecasts:

(Route Analyst) We have a good experience with our forecast of volume level. So how many kilograms, and how much space will be needed. There we are reasonably good at forecasting. We investigate deviations each month, and we have such a break, which says: Well, we differ more than 10%, then we go in and adjust.

The system produces accurate and unadjusted forecasts most of the time in some areas. When forecasts are not reflecting actual demand the system outputs are overruled by the system users, e.g. by changing parameters.

The system's calculations of prices furthermore do not take the specificity of particular transactions into consideration:

(Route Analyst) So, one can cite an example of a car. If we are to fly a car. A car weighs maybe not very much, but it is mega hassle of getting in and out of an airplane, right? So it should not just be priced with a per-kilo rate… If for example this is a red Ferrari, then one cannot just put Danfoss pumps on top of it, right?

The price and cost output of the RMS are corrected in order to reflect the specific transaction. The outputs of the system are analyzed to take the particularities of specific transactions into consideration. The systems output are thus overruled to meet the requirements of the specific freight, if necessary:

(Route Analyst) I say, I trust the system when it has got the right inputs. And the inputs have to come from me among others. ….That's where I think it will be really, really strong. And it is clear that over time, we have to have confidence in the system.

The system cannot automatically make accurate decisions only, but in any case the output guides the system users. The system users' gatekeeper function is understood to be in two different supporting roles: firstly, tuning system parameters as in the previous process step and secondly, overruling the system based on rational and intuitive processing of the system's information outputs (practice of information-processing). The practice of interacting with system (using, tuning and overruling the system) eventually determines the actual price being set.

System user – sales representative & sales representative – customer (Steps 5 & 6)

The dialogue between the system users and the sales force has so far been around customer information (step 2). Now the process works backwards. After having approved the system output, i.e. the minimum price, it is being forwarded by the system users to the sales force:

(Regional Sales Manager) So, we start with a negotiating point and a desired rate, and then we use the tools we have and gut feeling, etc., And the customer should have at least this much, capacity. And then, they [customer] say yes, or they say no. And then the question is what it is, the customer is willing to pay.

Before the sales force is able to start negotiating with the customer, the price is internally forwarded and discussed with the sales force. The input, which mainly is a transformation of the initial information in the beginning of the flowchart, has gone from unspecific talk to a specific minimum price. This guidance sets out the 'safe area' the SRs are allowed to play in or alternatively the transaction is disapproved and no sale is completed, e.g. due to lack of capacity.

Conclusion of DAN Cargo analysis

In conclusion, transaction pricing at DAN Cargo is organized and led centrally. The sales force cannot propose a price in a negotiation before they have received authorization from the system users. Thus, pricing responsibility is always passed on to the system users. The main task of the sales force is to estimate demand. However, their forwarded or adjusted input is not inserted directly into the RMS. Instead the input is first verified, e.g. by comparing it with information from other market or intuitively processed and then secondly adjusted. System users tune the system and work with the algorithms in order to make more realistic forecasts and thereby, better price decisions. The system's outputs are overruled when they seem to be out of tune with demand. The system in itself cannot guarantee to make accurate decisions for the benefit of the business and its customers. It only becomes a purposeful part of the pricing process, if human actors are interacting with the system. The output of the system further triggers the practices of the actors, e.g. overriding the system. Generally, the main practice at DAN Cargo of interacting with the system is strongly dependent on the practices of communicating and information-processing, and its related activities. Once these practices work, the system can produce valid outputs.

DAN Communication analysis

The case company DAN Communication is a global manufacturer of hearing and communication devices. The firm started up a new business division with consumer products a few years ago that accounts today for 35% of its total revenue. The products of the consumer division are specifically developed for the mass market and are mainly sold through consumer electronics and specialty stores. The interviewed staff has only responsibilities within this division. The focus on this analysis is on the sales prices to the customers.

Customer – sales representative & sales representative – sales manager (Steps 1 & 2)

In the majority of all deals the sales representatives (abbreviated as SRs) manage to make a transaction by selling equal to or above the minimum price (abbreviates as MP), also known as the list price. Thus, they can "reach the decision within the same meeting" (Sales Manager Nordics). The other 20% are cases where the pricing process gets more complex due to a higher need for coordination. Typically, this happens when a customer asks for a price that is below the MP or for specific requirements with regards to discounts and rebates. In such cases the seller "should never expect them [customer] to do anything else than pressure us" (Head of Product Management). The customers constantly push for low prices and thereby, challenge the sales force, a sales manager (abbreviated as SM; includes sales managers and sales directors) further argues:

(Senior Director of Sales ANZ) Only if I approve it, yeah. Because otherwise people just.. Yeah, I have to work very hard to tell them [SRs] that. Customers always just want money off, money off, money off…So in a way, by them [SRs] not having the ability to do that, means that they don't get in a difficult situation, where they feel that maybe they've got to offer it. Because they can't. They have to say: "I will go back and ask the business".

The customer exerts relational pressure. The quote implies that the sales force may be tempted to close the deal in certain situations, such as at the end of quarter when sales are needed. The close relationships between SRs and customers are here used to exert pressure for price reductions:

(Head of Sales Operations) That's the long-term relationship with the buyer in a retail chain. If they go way back, and they've done each other favors in the past, so you remember: "I did this for you" "Yeah, I remember that" "So now you do this for me" that's for sure a part of the game.

Old favors in the relationship enable customers to exert pressure and challenge the SRs. Sales people are hired due to their network within the industry and over time they become further embedded into relationships with customers. In the longer run, however, it may not always benefit the firm.

When there is an unusual customer request, the approval procedure is initiated. Although it is not clearly defined in every country, the SRs basically do not feel comfortable, or are explicitly not authorized, to sell below the MP without permission.

The chain of command for approvals involves various human actors at local and central level, but also a system for dealing with relational pressure and coordinating decisions. Figure 3 is an illustrative mapping of the transactions process steps, including the approval levels. Each step will be described in the subsequent sections.

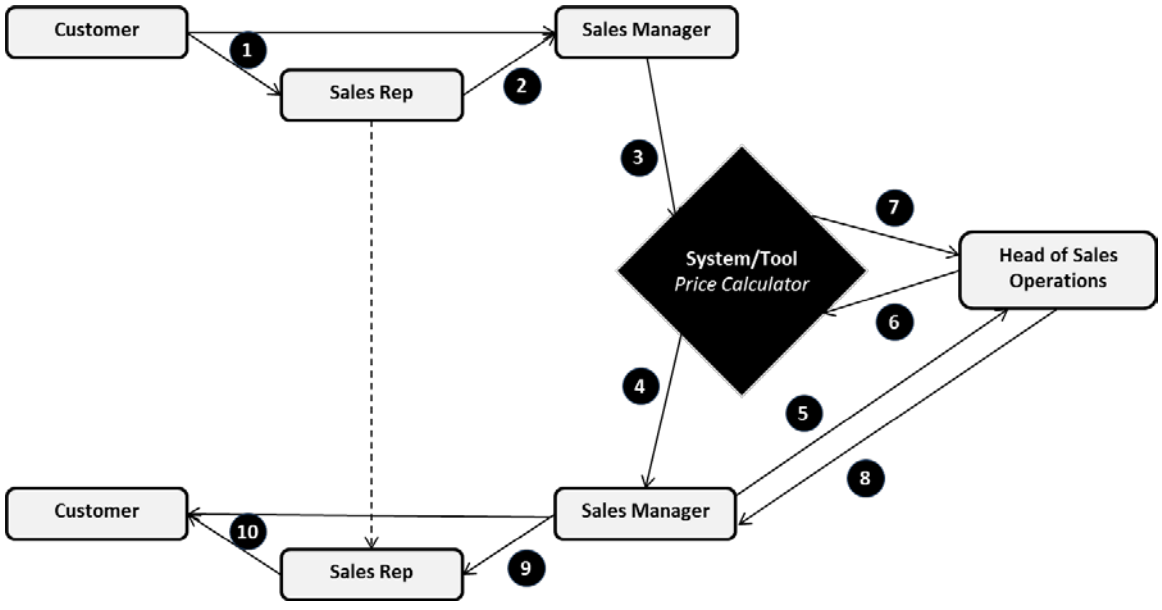

Figure 2: Price approval process at DAN Communication

There is often only a thin line between discussing a price and passing on responsibility as there is no clear rule when and how an employee is obliged to ask for approval. Throughout the analysis it will be shown that the approval procedure is a mechanism to govern the sales transaction process. The broadly defined governance allows for flexibility and serves mainly three purposes: 1. assembling

information from different parts of the organization; 2. making coordinated decisions; and 3. decreasing SRs level of discounts.

A SM explains his observations about SRs passing on the pricing responsibility:

(Sales Manager Nordics) It depends. If the colleague is a bit more experienced, then they usually know roughly what they have to play around with in terms of discounts or marketing support. But if it's a new case for them, or if it's a fairly new employee, then they usually turn to their manager.

According to that, experience and tacit knowledge affect the interaction between SRs and SMs and thus, also determine the practice and activities being used next, e.g. passing on responsibility. The SMs may have their own idea of what information needs to be forwarded to them for making an approval decision. The more routine the SRs get, the better they understand what information they need to be able to provide to the SMs. It also indicates that information might be adjusted to meet the SMs' requirements.

The experience-based intuition of the SMs often plays a vital role for deciding to either approve, disapprove or to come up with another price suggestion. Often he then gets involved as well in the customer interaction. The manager has to decide if the customer is eligible for a special price, e.g. due to a larger order volume. The experience tells him, if he can "feel comfortable that the customer can actually handle that extra volume" (Sales Manager Nordics). Knowing that some customers are able to do that and some are not, is something the SMs "basically just learn over time" (Sales Manager Nordics). Experience-based intuition is therefore used to gauge the effects of a discount. The mindset, however, is also analytically driven in sales as emphasized by a SM:

(Senior Director of Sales ANZ) There's nothing there that's just available to offer …Because every dollar and every cent count, so it has to be justified.

The firm seems to expect a rational decision, which is to make a profitable deal based on margin requirements. Though, the SRs on purpose do not have the relevant tools and cost information to evaluate whether a certain price below the MP is actually still a good price from a marginal point of view (next step). Thus, the SRs cannot use the potential contribution margin (CM) of the transaction as a justification.

In summary, sales people are permanently challenged by their customers to reduce prices. To support them and guard the business, a protective mechanism in the form of an approval system that governs the pricing of a sales transaction is in place. In such cases, the SRs have the role of forwarding relevant information to their SMs. It is not fully defined what information is necessary and what justifications are acceptable. However, through experience and routine the SRs get a better understanding of what they need their superior to provide with.

Sales manager – system & system – sales manager (Steps 3 & 4)

Based on the received information the SMs start interacting with the price calculator[3]. If the calculated CM is above a certain percentage, the number turns green to indicate a healthy or good margin. When the CM percentage is too low, the number turns red, suggesting a disapproval of the deal.

[3] The system is an excel tool, internally known as the "price calculator". Here the system users can insert the volume and the price that is currently being negotiated with a customer. Among other outputs, the tool calculates the contribution margin (CM) to give an indication on the financial attractiveness of the potential deal.

After using the system, the SMs then evaluate whether the system is telling the full story and what further actions should be taken. Though, it is evident that if the calculated CM is red or in some sort of a "grey area", the SM will have to be very confident that it is still in his responsibility area to approve or disapprove the price. If not, he will reach out to the head of sales operations (HSO), who is the next person in the "chain of command" to either ask for approval or guidance. For the SMs it is not "overly clearly defined when I can make a decision, and when not" (Sales Director Western Europe). The system has its limitations and might provide misleading suggestions. According to a SM, it is faulty as green is not always good and red does not mean that the deal should not be approved:

(Sales Director Western Europe) There might be products, which are old, where, if you use a price calculator, and you wait until the price gets green, the price will still be so high, that the customer will not buy the product. So for example product [name disguised]? That's a very expensive product for us. And it's an old product. So we cannot sell this product anymore, in most cases, with a healthy margin. So based on the price calculator, we should always say no to the customer [while in reality it is still sold].

From a governance point of view the calculator exists to rationally process information for the success of the business, but when using the system, the output is often only at first sight reasonable. The system's output guides the system users**.** Though, the SMs at the same challenge the system by drawing on other types of information such as the stage in the lifecycle of the product. The SMs coordinate different decisions through taking various types of information into consideration, information which is not available at the local level.

According to the interviews, many SMs believe to have a guarding role when it comes to using the system. On purpose, the SMs do not give the SRs access to the tool:
(Sales Director Western Europe) I don't even think they (SRs) think that way. They think: "Oh, green must be good, so I can sell at 30%. Which I think should not be the case. I think we have to be strict about it.

In their eyes, SRs are probably relying too much on the system, and do not know how to interpret the output in the correct way. In addition, SRs might also be inclined to sell at the lowest margin possible in order to take the path of the lowest customer resistance (Frenzen et. al., 2010). In other words, SMs think that SRs should be controlled.

The price calculator is an important tool for SMs as it calculates the contribution margin, which is a key criterion for the approval decision. Though, for many managers it is certainly not the only parameter to consider. The SMs are the only local users of the price calculator and are therefore equipped with knowledge, e.g. insight into CM or limitations of the systems that the SRs might not have. What the "grey" or "dangerous area" is, is only a perception that is for every SM different. Depending on such interpretations the SMs may decide to involve the HSO at headquarter level. Thus, the SMs have flexibility on deciding when the pricing responsibility is passed on. If they are uncertain, they can use the output from the system to send the information to the HSO. The output of the system guides the SMs and decides on the next activity and thus, also practice, e.g. passing on the responsibility to the HSO and forwarding information to him.

Sales manager – head of sales operations (Step 5)

The centrally located HSO has the final decision-making authority. If the SMs feel uncomfortable approving the deal or believe it is out of their responsibility area, they involve the HSO:

(Sales Manager Nordics) I also have a pretty good understanding of roughly what we can do. But then I usually like to have it double-checked by the HSO.

The lack of clarity in the governance mechanism leads to a feeling of insecurity, and thus also increase complexity in the pricing process. By reaching out to the HSO “just in case” (Sales Director Western Europe), the SMs are “on the safe side” (Sales Manager Nordics) as in this way the “four-eye principle” (Managing Director Central Europe) is lived, meaning the pricing responsibility is shared, or even fully passed on to the HSO.

The SMs, even though they have at this stage potentially more insights than the SRs, are also subject to issues with information asymmetry:

(Sales Manager Nordics) It's very difficult for us in sales to have a good overview and understanding of what HSO is sitting on in terms of production and sales forecast.

In his eyes, the HSO has other sources of information (global overview on inventory, global demand etc.), which may help in making a coordinated decision for the benefit of the overall company. It is argued that the HSO has the best overview for approving the price of a deal.

When they reach out to the HSO, they also often give their opinion why they think the deal is fine or what their concerns are, as ultimately the SMs also need to justify why they are asking for a special price. In other words, they are sometimes selling it to the HSO. So in such instances, the information is being adjusted when it is provided. In a few words the SMs describe the case in an email, often with the price calculator and the current numbers attached to it.

(Sales Manager Nordics) But what I usually provide him is a bit of a...if he doesn't know the customer, I may briefly describe the customer. Also highlighting, if it's a customer that I clearly feel very confident with.

The quote demonstrates that intangible factors, such as expressions of opinions and feelings, are of high importance and thus, such information needs to be forwarded.

The HSO might want to consider information, e.g. on delivery, that the SMs would usually not evaluate due to the outlined information asymmetry. Thus, information, which may not be of importance for a local decision, is relevant for the HSO, drawing together diverse sets of information and coordinating decisions. Also given the fact that the HSO might not be familiar with the local environment, e.g. customer type, requires further adjustment of information. By involving the HSO, the next person in the chain of command is activated. That implies a shift in the price delegation for making the approval decision.

Head of sales operations – system & system – head of sales 0perations (Steps 6 & 7)

With the information from the SMs, the HSO can evaluate the numbers and “do the math contribution wise” (HSO). Same as the SMs (see step 3/4), the HSO takes more factors than the CM into consideration. It is explained by the HSO that his practice of interacting with the system have changed due to gained experience:

(Head of Sales Operations) I mean, in the beginning if the number turned red, if the figure turned red in my Excel spreadsheet, I immediately said no. But today I look at the number, and I say: Okay, fine, so is this an end-of-life product? Yes, no? Do we have tons of inventory that we essentially need to get rid of? Yes, no? Do we have tons of inventory that we can sell, but I know that we will shortly introduce a new packaging, so essentially we would like to deplete this inventory in order for us to introduce the new packaging as soon as possible? Then I'm also more motivated to say yes.

Even though, the HSO is measured mostly on the global P&L and on meeting the global CM targets, he looks for potential reasons to dismiss the output and overrule it. Overriding the system can also mean that a “no” is given for a transaction that is actually shown as green in the tool. The arguments against the system’s recommendation cannot be found in the price calculator, but become visible

when the human actor considers “a number of circumstances around the product” (HSO). The HSO further elaborates:

(Head of Sales Operations) That's the beautiful thing about a human brain. You can juggle these 15 different kinds of small and big pieces of information that are all part of the whole picture, right? You can juggle those in a couple of seconds. And all these things you cannot put into a pricing calculator, even though we would love to do that.

Although the firm’s focus is on the contribution margin, the empirics clearly reveal that in practice the tool is only a decision support tool. In other words, the HSO uses the tool, but may overrule its suggestion when he believes that other factors have a higher weighting factor than the price calculator. These factors are some sort of a “mental check” (SM4) that does not exist in writing. This is mainly caused by domain-specific and experience-based intuition, which has developed over time in combination with rational processing of information outside the price calculator. It is strongly believed that the factors that pop up in the mind of the HSO vary from case to case, also in the order they appear.

Whereas the human actor develops higher intuition due to more experience and learning, the system does not get smarter over time, unless its set-up is tuned by a human (see DAN Cargo analysis). However, at DAN Communication the tool is only maintained and updated, but not changed. The HSO argues:

(Head of Sales Operations) I think the benefit is that it (the process) has a human touch to it. I think the benefit is that we have a conversation about many of the cases. And during those conversations, everything that cannot be weighted and put into an Excel spread sheet and turned into something that is plus-minus, XYZ, that comes out. And I think that's a value in the process or in the structure. It's also a time consuming process, because every inquiry needs to be taken sort of in hand and hand-carried through, but I still think that it's worth it.

The practice of communicating between the different actors is necessary for making the decision. As a result, he decides to continuously question and in specific instances as a consequence to override the system and to discuss pricing with the SMs.

In sum, the HSO extensively communicates with other parts of the organization and uses both rational and intuitive processing to gauge output of the system and to (dis-) approve a price. When outputs are interpreted to be invalid, the system is overruled.

Head of sales operations – sales manager (Step 8)

From this step onwards, the flow is reversed and works backwards towards local sales and customers. Triggered by the proposal of the system and the evaluation of system output with various other business factors, the HSO makes a decision on what and how to tell the SMs. Often he does not only provide the decision, but also provides further information:

(Head of Sales Operations) I will tell him, so I will be very open about that: "You can do this, but you should know that this is going to pull down your overall contribution from your business. Hence, you need to find some other business that pulls it up again in order for you to hit your contribution margin target.

As illustrated in the quote, the HSO forwards supplementary information to the SM. With this warning the HSO not only challenges, but also guides the SMs. A SM further adds:

(Sales Manager Nordics) But seriously, I think we are on the right path, and I think HSO is also doing a great job in that. Challenging us in sales, and asking us of the dynamics and what we should sort of take into consideration... So yes, I think we have a good team in place, and good intentions. And then

usually the end result is that I am given a sort of a small price range that he tells me then: "Okay, ideally this is the price you should go for. However, if it's really tricky and tough competition, this is the absolute minimum price."… And then I do my best to land somewhere in between.

The HSO supplies relevant information which the SMs then may take into consideration. It serves also a safeguarding purpose for the HSO, which again relates to the practice of delegating pricing authority.

The HSO sometimes initiates a dialogue again with the SM to collect more information, ultimately reducing further information asymmetry. By making an agreement together, the pricing responsibility is (perceived to be) shared between both actors.

The high degree of flexibility within the governance structure allows for variance in replying to a price approval inquiry. In the end, it is not only the approval decision itself that is strongly influenced by the evaluation of the system output. Also the way a reply is given (e.g. challenging, guiding, forwarding) or starting a discussion to converse about the case is characterized by the HSO´s processing of information, i.e. input from SMs and output from the price calculator.

Sales manager – sales representative & sales representative – customer (Steps 9 & 10)

The newly given price or price range is now the 'safe playground' for the SMs. As a result, they feel more comfortable as they were able to reduce personal risks and responsibility due to the involvement of the HSO. Now the SMs pass the information on to the SRs:

(Sales Director APAC) The customer wanted 12 dollars...but I would tell my SR a higher price to try to get him to close it higher first. I will be telling them: "Try and sell it at 13 first." And then if they come back and say…give me also some reasons: "Bla bla, this doesn't work, the customer is very bla bla bla". Then I know, okay, we have tried our best, and then I will let it go at the lower price.

(Sales Director Western Europe) It depends on how much I know about the customer and about the SR. Some sales guys, I know 100% that it's the truth. Some other guys I will say: "I can't do it. Can you go back and maybe see if you can increase it from 40 to 45?" And they say: "Okay, we will try." So actually, the latter I do most. I always ask: "Can you try for a bit more?" And sometimes they come back and say: "No, it was really…the maximum they are willing to pay."

In this step, depending on the previous performance and experience the SMs had with the SRs, they often challenge them to push a bit harder at the customer – giving it a last try to raise the price from what the customer had asked for. In correspondence with the previous step, it can be stated that the process back to the customer is about stimulating the next actor in line to achieve higher profits. For this purpose, the information of the HSO is adjusted. This means the SMs are also gatekeepers in this process step while having a guiding role. The data shows that with the "sense of knowing and understanding" (Senior Director of Sales ANZ) and the approved pricing 'playground', the sales person's confidence also increases.

Conclusion of DAN Communication analysis

Overall, the case analysis shows how DAN communication deals with the challenge of meeting customers' price expectations while at the same time maintaining a profitable business. In order to alleviate sales people from the pressure and because managers are not certain that sales people can be trusted in the process, a 'chain of command' may be set in motion. In other words, when a customer asks for a price below the perceived minimum, the pricing decision needs to be coordinated across the hierarchy. This in particular because important information is not accessible at the lower levels.

The approval process in itself is not straightforward due to a lack of policies. This makes the pricing process somewhat more complex and puts the focus on the practice of delegating pricing authority.

The behavioral characteristics of the human actors, such as experience, feelings, learning and intuition, are to a high extent affecting the practices and its activities. For handling the pressure (customers and profitability targets), coordination complexity and information incommensurability, a rather informal approval procedure is lived.

Discussion

The paper has documented that the pricing process is an interactive chain of practices used across the organization. The suggested pricing practices are durable activities, which actors in the organization share and use to deal with complexity in pricing decisions. In this way, it is claimed that the decision concerning the price of a specific sales transaction is not one decision, but a collection of practices that together shape the price decision. In the following, these findings and its implications are outlined.

Comparison of cases

At DAN Cargo, it was paramount to predict demand in order to optimize pricing. Demand forecasts, however, were subject to considerable uncertainty. Both inputs and outputs of the pricing system were deemed problematic. Inputs were questioned because of the sales forces' interest in securing capacity for their customers. Outputs from the system's algorithms are not able to take irregular variance based on unique events adequately into consideration and sometimes demand forecasts are out of tune with actual and expected demand patterns. The system therefore could not make decisions without other supporting practices. Consequently, information-processing activities were key in getting new information on changing demand patterns or extraordinaire events transferred to the central pricing unit. The processing of information was dependent on communication practices where multiple entities shared and debated the relevance of information from the sales people. Based on the system users' intuitive and rational processing of information, the input is adjusted and when the system's algorithms produce forecasts that are not aligned with expectations, the system is tuned or overruled. The functioning of the system, which is central in this pricing process, is thus dependent on practices of information-processing and communicating.

At DAN Communication, the dominating practice is delegating pricing authority. It is important because of two factors. Relationships with buyers are vital for the selling firm. The close relationships and buyers' interest in reducing prices make it difficult for sales to resist pressure to reduce prices. Furthermore, coordination between the multiple entities is important because of the interconnectedness of markets, inventory issues, new product introductions etc. Pricing is therefore not a local, decentralized responsibility.

The price delegation process is supported by information and communication practices to work on the issues of coordination and relational pressure. Coordination is very relevant as the governance on decision rights is not as clearly defined as in DAN Cargo. The pricing process at DAN Communication deals with the problem of relational pressure through installing rules and informal practices for sharing responsibility as well as guiding and challenging sales not to cave into customer pressure. Information is passed on and adjusted based on the evaluation of the information. Furthermore, intensive processes are used to evaluate information and system's output from the price calculator. Intuitive processing of system outputs (CM) is important when overruling system outputs and for passing on pricing relevant information to the sales force. This process coordinates disparate forms of information such as inventory levels, lifecycle, product introductions, logistics etc. and serve to challenge and inform sales about the factors relevant for the final price negotiation. The two cases, their key issues and practices are compared in Table 2.

Based on the findings, this paper contributes to research in a number of ways. As explained above, this research study demonstrates that the key practices in both cases are strongly interlinked with and often dependent on other practices and their respective activities. We therefore empirically contribute

to and confirm the claims made by Nicolini and Monteiro (2016) about the practice approach. Among others, we have documented that "practices exist in configurations" (Nicolini & Monteiro, 2016, p. 4), as also argued by other practice researchers, such as Czarniawska (2007), Gherardi (2012), Latour (2005) and Nicolini (2012). In the two cases, this relates to practices happening at the same time and space, e.g. same pricing process step, or to the fact that they are in interconnected relationships (Nicolini & Monteiro, 2016). Furthermore, we have seen in the empirics that the context is rather dynamic in the pricing process, indicating that practitioners enacting a practice need to be able adapt to new situations and that practices are "neither mindless repetition nor complete invention" (Nicolini & Monteiro, 2016, p. 6). Additionally, in agreement with Jarzabkowski et. al. (2016a), this study reports that it is key in practice-based research to focus on the "interaction of the what, who, and how of practices" (p. 250). Investigating these three elements in isolation would have not led to the same results.

Table 2: Comparison of practices between case companies

	DAN Cargo	**DAN Communication**
Key problem in pricing process	Reducing relational pressure and to gauge demand and transfer demand info to central pricing so that prices on a daily basis could be optimized. Uncertainty about information and complexity in sources of information between local subsidiaries and headquarter.	Ensuring that relational pressure does not lead to margin leakage and coordination across markets and functions. Rather unclear rules of price delegation. High degree of information asymmetry within the 'chain of command'.
Key type of information	Demand	Contribution margin Customer information Operational info (logistics, life cycles, new product introductions)
Key practice	Interacting with system	Delegating pricing authority and communicating
Practices supporting primary practice	Information-processing Communicating Delegating pricing authority	Information-processing Interacting with system
Key interaction between practices	Practice of interacting with the system (tuning and overruling) is dependent on practices of information-processing (verifying, adjusting and intuition) and communicating (forwarding and guiding).	Practice of delegating pricing authority is linked to practices of information-processing (adjusting, rationality and intuition) and communicating (discussing, forwarding, challenging and guiding).

These findings extends the current literature seeking to analyze pricing practices (Ingenbleek et. al., 2003; Ingenbleek & van der Lans, 2013; Liozu, Hinterhuber & Somers, 2014) through elaborating on the more micro-level practices leading firms' to price decisions. The developed practices are more fine-grained than the three price-setting practices referring to the use of cost, competitor and value information (Ingenbleek & van der Lans, 2013).

The paper extends behavioral research on pricing by investigating how the identified practices are linked to intuitive and rational processing of pricing information. The pricing process is a string of interconnected practices where intuitive and rational processing of information is dependent on and interlinked with other practices. Intuitive and rational processing is thus not performed by an isolated individual, but it is rather embedded in practices that affect and feed judgements. As an example, the RMS' ability to rationally predict demand and set prices is potentially flawed. The practice of communicating as well as activities relating to the practice of interacting with the system, such as tuning the system or overriding systems output, are found necessary in the DAN Cargo case. Furthermore, we have documented situations where intuitive feelings determine the subsequent practice and activity, e.g. when the system users have a feeling of doubt and decide to verify

information or when at DAN Communication the SMs' gut-feeling tells them no to make a price decision, but instead to pass on the responsibility to the HSO. Individuals' usage of rationality and intuition are in this way spun into a web of social practices. Effects of rational and intuitive information-processing should be judged in its social context and through its interconnection with other practices.

This case study's findings also extend the research on price delegation, which is mostly of experimental and normative nature. The paper illustrates the core dilemma of price delegation: on one hand individual sellers may be tempted to offer too low prices to customers due to relational pressure and reward structures and the central has insights into capacity, strategies and cost information which overall justifies centralization; on the other hand sellers have direct access to market information which is paramount in the price decision. Therefore, considering the information asymmetry confirmed in this paper, the relationship between price delegation and profits is probably U-shaped with intermediate levels of price delegation being optimal as argued by Homburg et. al. (2012). At DAN Communication we saw such an intermediate level of centralization, whereas DAN Cargo was more centralized.

We extend the price delegation literature through analyzing the practices and corresponding activities that make a given level of formal centralization of the pricing decision work. The authority structure for price delegation was not clear at DAN Communication and actors therefore extensively processed information and communicated. At DAN Cargo, sales people from various markets forward and adjust information for the system users, which are the central decision-makers. Although price delegation was clearly defined at DAN Cargo, the practices of communicating and processing-information are vital given the information asymmetry and need for ensuring correctness of the data. The informal pricing practices analyzed in this paper are used to make the decision-making structure work as intended.

Managerial implications

Two main managerial implications are outlined in the following. First, developing insights into the pricing practices of the firm is key for managers seeking to understand their own pricing process. Many companies aim to set up governance mechanisms and approval levels to deal with price erosion, relational pressure of customers, margin leakage and discounts. Looking at such issues from a practice-based view will give managers further insights and inspiration for setting up, engineering and developing such pricing structures. The description and critical reflection of practices potentially empowers practitioners (Gherardi, 2012).

Second, it is illustrated how the ability to deal with complexity is related to the multiple practices used to make a pricing decision emerge. These practices are social and shared among groups of organizational members. Reconfiguring the pricing process is therefore a difficult process because of the multiple elements and practices that need to change. Based on the analysis in this paper a number of questions for analyzing and changing pricing processes are important: which communication patterns are especially important for coordinating pricing information? To what extent is the experience and intuition of employees important for the pricing decision? What are the limitations of the pricing system, and how can they be overcome? How should pricing authority be delegated, and are informal practices an important part making the pricing process work? How can the existing practices be used in the new process or structure to reduce potential resistance? From a human resource perspective, answers to these questions will also serve as a guidance for potential training, skill development and recruitment initiatives (see Liozu, 2016).

Limitations & future research

With this study we hope to have documented that pricing practices constitute an interesting research avenue. The current study, though, has a number of limitations that future research could address.

First, the paper has used a relatively 'bottom up' empirical research approach in the two case firms. Future research could further expand the number of relevant practices and test their relevance in larger scale quantitative studies. Such studies already exist in the economics literature, e.g. the study of Bloom and van Reenen (2010) listing eighteen management practices. Models have also been developed to connect the practices with performance outcomes, which is controversially discussed (see Bromiley & Rau, 2014, 2016; Jarzabkowski et. al., 2016a, 2016b).

Second, price decisions are often made in a group effort. Some research has already touched upon topics such as collective confidence, collective intuition and collective efficacy in pricing (Liozu, 2015; Liozu & Hinterhuber, 2012; Liozu, Hinterhuber, Perelli & Boland, 2012). Getting more clarity on behavioral group factors and relating these to coordination in pricing seems to be a promising avenue for further research.

Third, recent studies have pointed towards the importance of mindfulness on an individual and organizational level, when it comes to implementing value-based pricing (VBP) (Liozu, Hinterhuber, Perelli & Boland, 2012). Many of the key factors identified by Liozu et. al. (2012) can also be found in the data of this study, leading us to the assumption that mindfulness played an overall important role. Therefore, we call for future research on studies of mindfulness in pricing, next to VBP. In that regard it may be fruitful to combine a practice-based view with a more cognitive and psychological focus on the individual carrying out the practice.

Fourth, this study focused on how actors within the firm share and adjust information for making price decisions, assuming that the information is already located inside the firm. To start one step earlier, future research may also deal with the practices used by companies, in particular sales people, to gather pricing information from the external environment (customers, competition, markets).

Conclusion

The pricing process is a complex organizational process requiring the interaction of a multitude of practices in order to make a pricing decision. An isolated individual does not make a pricing decision, but it is the interaction and sequence of certain practices, enacted by multiple practitioners and mediated by the pricing system, that shape firms' pricing decision. The practices used may broadly be categorized as information-processing, interacting with system, communicating and delegating pricing authority. These practices and their respective activities help firms to deal with the experienced complexity and its appendant challenges, such as information asymmetry or relational pressure from customers. Understanding these practices, and their interaction, is key when seeking to comprehend how firms actually price their products.

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